magnetic layer; and a pair of hard bias layers, deposited on both sides of said multilayer film, for orienting the magnetization direction of said free magnetic layer perpendicular to the magnetization direction of said pinned magnetic layer; and a pair of electrode layers respectively deposited on said hard bias layers, wherein said electrode layers extend over said multilayer film,

wherein the width dimension of a portion of each electrode layer extending over said multilayer film is within a range from greater than 0 μm to 0.08 μm,

wherein an angle θ1, made between a top surface of the protective layer and an end face of each electrode layer, is about 20 degrees or greater and about 60 degrees or smaller, and

wherein said pinned magnetic layer comprises a plurality of soft magnetic thin films having different magnetic moments and nonmagnetic material layers, which are alternately laminated with one soft magnetic thin film separated from another by one nonmagnetic material layer, and said pinned magnetic layer is in a ferrimagnetic state in which the magnetization directions of adjacent soft magnetic thin films, separated by the nonmagnetic material layer, are aligned antiparallel to each other.

**2**. The magnetoresistive-effect device according to claim **1**, wherein said nonmagnetic material layer is made of a material selected from the group consisting of Ru, Rh, Ir, Cr, Re, Cu, and alloys thereof.

**3**. The magnetoresistive-effect device according to claim **1**, wherein said antiferromagnetic layer is made of a PtMn alloy.

**4**. The magnetoresistive-effect device according to claim **1**, wherein said antiferromagnetic layer is made of an X-Mn alloy where X is a material selected from the group consisting of Pd, Ir, Rh, Ru, and alloys thereof.

**5**. The magnetoresistive-effect device according to claim **1**, wherein said antiferromagnetic material is made of a Pt-Mn-X' alloy where X' is a material selected from the group consisting of Pd, Ir, Rh, Ru, Au, Ag, and alloys thereof.

**6**. The magnetoresistive-effect device according to claim **1**, wherein the protective layer is deposited, as a top layer, on top of said multilayer film.

**7**. The magnetoresistive-effect device according to claim **1**, wherein said protective layer is deposited where there is no junction between said multilayer film and said electrode layers.

**8**. The magnetoresistive-effect device according to claim **1**, wherein an insulator layer is deposited between said electrode layers, which are deposited above and on both sides of said multilayer film, and the end faces of said insulator layer are in direct contact with each of said electrode layers or is separated from each of said electrode layers by a layer.

**9**. The magnetoresistive-effect device according to claim **1**, wherein said angle θ1 is about 25 degrees or greater and about 45 degrees or smaller.

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